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Engler and Prantl's *Die natürlichen Pflanzenfamilien*, beginning, therefore, with slime molds and ending with thistles; and with each plant there is given the recorded facts as to its injurious effects, and also such medicinal qualities as seem important.

The volume is a great compendium of well-organized information in reference to a subject that has been attracting a good deal of attention recently at national and state agricultural experiment stations in connection with plants injurious to live stock, but of course its scope extends far beyond that special interest. The author is to be congratulated upon the completion of a work that must have involved an unusual amount of patient toil and organizing power.—J. M. C.

Subantarctic New Zealand

The Philosophical Institute of Canterbury, New Zealand, has published in cooperation with the government a most admirable work on the geology, botany, and zoology of the Subantarctic Islands of New Zealand.⁵ In the introduction there is given by the editor, Dr. CHILTON, an interesting account of the scientific investigation of these islands; this part contains a number of excellent photographic reproductions of characteristic landscapes. There are six papers dealing with the botany of the islands, one of which is by PETRIE on the grasses (pp. 472-481), one by LAING on the marine algae (pp. 493-527), and one by various collaborators, giving a list of the fungi and bryophytes.

Three botanical papers are of somewhat wider interest and may be noticed briefly. CHEESEMAN gives a somewhat detailed account of the systematic botany (pp. 389-471). This paper includes a historical account of the botanical exploration of the islands, an annotated list of the vascular plants, a tabular view of their distribution in the individual islands and elsewhere in the world, and an interesting concluding part on the affinities of the flora. The flora consists largely of a New Zealand element, representing probably recent immigrations; there is also an interesting Fuegian element, as well as an endemic element. The idea of recent and extensive land connections is not favored.

COCKAYNE gives in his usual satisfactory style an account of the ecological botany of the islands. The leading physiognomic plants are briefly treated, after which the ecological factors are considered, wind being regarded as the most important single factor. Then follows an account of the special ecology of the plants. The body of the paper presents the plant formations, which are more numerous than one might expect to be the case. On the Snares one of the most important formations is the *Olearia Lyallii* scrubby forest. On the Auckland Islands occurs the rata forest, dominated by *Metrosideros lucida*, and known through previous papers by COCKAYNE; this formation tapers off

⁵ CHILTON, CHARLES, with various collaborators, *The Subantarctic Islands of New Zealand*. pp. 848. 1 map. pls. 25. numerous figs. Wellington, N.Z.: Philosophical Institute of Canterbury. 1910.

into a mountain scrub, consisting chiefly of stunted rata. The Auckland Islands have also extensive meadows and bogs. The paper closes with an account of the important influence played by animals upon the vegetation.

The plant formations of Campbell Island are described by R. M. LAING. This island contains no trees, the tallest vegetation being the *Dracophyllum* scrub; the treelessness is ascribed to the violent westerly gales. Apart from the scrub, Campbell Island has interesting tussock meadows. Some of the geological papers will interest botanists. The zoological papers are of interest chiefly to taxonomic specialists in the groups concerned.—H. C. COWLES.

The geographic botany of Belgium

MASSART's long years of patient study in every part of Belgium have made possible the publication of a splendid treatise on the flora of the country from the standpoint of phytogeography.⁶ His previous monograph on the dune vegetation of Belgium is still fresh in the minds of phytogeographers, and the work here noticed is all the more welcome because of the excellent impression made by the earlier volume. This splendid work is dedicated to the memory of ERRERA, and copies were presented to the members of the botanical congress at Brussels. In the introduction the author sets forth his views concerning the methods and purposes of geographic botany, and shows how greatly the methods of ecological geography differ from those of floristic geography. Interesting remarks are made on the relations of "accommodation" to the composition of plant associations.

The first chapter deals with the geology of Belgium, and the second with climate and soil. As is well known, much of the country is of very recent origin, so recent, in fact, that historical records are available as to many points. Under the caption climate there is considered the bearing of various phenological data. The third chapter presents the chief kinds of plant associations that are represented in Belgium. The great density of population of the country for many centuries has greatly modified the natural vegetation cover, yet MASSART has been able to discover and describe a very large number of associations of representative composition, in fact, nearly all that are to be found in western Europe. The chief open associations are found on rocks and on moving dunes, and natural closed associations are represented by heaths, fixed dunes, pans, and bogs. In this part of the volume there are many text figures which illustrate the modification of plants when exposed to diverse conditions. The forests and meadows, as well as the farms and roadsides, are considered under the head of associations modified by human culture. The final chapter considers in detail the various geobotanic districts of Belgium.

⁶ MASSART, J., *Esquisse de la géographie botanique de la Belgique*. Rec. Inst. Bot. Léo Errera, tome supplémentaire VII bis. pp. 332. figs. 99. With annex containing 216 simple phototypes, 246 stereoscopic phototypes, 9 maps, and 2 diagrams. Brussels. 1910.